

PATENT APPLICATION

TODDLER DRINKING CONTAINER AND METHODS FOR MAKING
THE SAME

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BACKGROUND OF THE INVENTION

The present invention relates generally to drink containers, and more specifically, to drinking containers for toddlers, infants, elderly, or any person who may have difficulty
10 drinking from various conventional beverage containers and cups.

A child is typically weaned from the breast or a baby bottle by transitioning to a toddler cup. The typical toddler cup is formed from a lower cup portion and an upper lid portion. The lid portion has a spout which is in some cases spill-proof. For example, the cup is designed so that the child can suck liquids out of the cup, but the liquids will not spill
15 out of the cup when the cup is turned upside down.

When a parent travels with a child, the toddler cup presents numerous disadvantages. For instance, the parent must fill up the toddler cup with a liquid such as milk prior to traveling unless he/she wishes to take the extra time to stop at a store during the outing to buy a beverage for filling up the toddler cup. The store bought liquid typically does not have
20 the same volume as the toddler cup. Accordingly, the parent may have to waste the excess liquid after filling the toddler cup. Additionally, if the parent later desires to refill the toddler cup with a different liquid, *e.g.*, replacing milk with juice, the parent must again stop and buy another beverage. The parent may also wish to wash out the toddler cup prior to

replacing the liquid. In this event, the parent has to take time to find a suitable washing facility.

The extra time that a parent must spend to fill, refill, and wash a toddler cup is often time that the busy parent cannot afford. A typical toddler cup user is between 1 and 3 years
5 old and has a rather short attention span. Accordingly, the busy parent is constantly striving to minimize their outing time so as to not overtire their youngster. The added time required for managing toddler cups can be rather significant when compared to the average toddler's attention span.

Another problem with some of conventional toddler cup designs is their inability to
10 withstand the stresses placed on the cup by the toddler, *e.g.*, when the toddler throws the cup against a wall in a tantrum fit. If the lid of the toddler cup is merely designed to pop onto the lower cup portion, the lid can easily "pop off" when thrown against a hard object. Needless to say, such an event would result in a large mess when the contents were no longer contained by the lid and cup being snapped together.

15 A closable two-piece sport spout drinking system which is conducive for allowing adults to drink from beverage bottle exists. This closable two-piece system is not conducive for enabling a small child to drink because the device requires a sucking action of considerable force and often requires the user to have ample strength to squeeze the beverage bottle in order to facilitate flow. The device also requires a considerable amount of fine
20 motor skills and coordination of the user's mouth and lips. The two-piece sport drinking system is also not conducive for allowing an elderly individual to drink for the same reasons.

Accordingly, there is a need for improved spill-proof beverage containers for toddlers, as well as elderly or disabled individuals.

SUMMARY OF THE INVENTION

Accordingly, a toddler beverage container that is pre-filled with a consumable liquid and not openable after purchase is provided. In general, the toddler container includes a spout which allows a toddler to drink the liquid from the container but prevents leaks from occurring when the toddler is not drinking from the spout. The toddler cup is also formed from at least a top and bottom portion which are fixably coupled to each other after being pre-filled with the consumable liquid.

In one embodiment, a beverage container is disclosed. The container includes a bottom portion formed to contain a consumable fluid and a top portion fixably coupled to the bottom portion so as to further contain the fluid and whereby the top portion and bottom portion are not detachable. The top portion comprising a drinking spout having a one-way valve, wherein the one-way valve opens to expel fluid from the bottom portion through the spout when a negative pressure is applied to the spout and the one-way valve closes to substantially prevent fluid from leaking out from the bottom portion through the spout when negative pressure is not applied to the spout.

In a specific implementation, the bottom portion forms a cup having curved sidewalls with at least a first sidewall having a circumference smaller than a second and third sidewall portion's circumference. The first sidewall circumference is sized so that a child having an age between about 1 year and about 3 years old can substantially wrap his/her hand or hands around the first circumference. In one aspect, the first sidewall circumference is sized so that a child having an age of about 6 months to about 1 year can substantially wrap both of his/her hands around the first circumference. In another aspect, the first sidewall circumference is sized so that a child having an age of about 2 or 3 years can substantially

wrap his/her hand around the first circumference. In yet another aspect, the curved sidewalls further include at least a fourth sidewall having a circumference smaller than a fifth and sixth sidewall portion's circumference, wherein the fourth sidewall circumference is sized so that an adult can substantially wrap his/her hand around the first circumference. In a specific embodiment, the curved sidewalls form an hourglass shape.

In another aspect of the invention, the top portion further comprises a safety seal for the spout so that when the spout is moved to an open position the safety seal is broken or removed. In a specific implementation, the bottom portion includes metered lines for indicating the quantity of fluid consumed or remaining in the bottom portion. In another embodiment, the bottom portion is pre-filled with the fluid.

In another embodiment, the invention pertains to a method of making a beverage container. A bottom portion is formed to contain a consumable fluid. The bottom portion is then filled with a consumable fluid. A top portion is then formed and the top portion is then fixably coupled to the bottom portion so as to further contain the fluid and whereby the top portion and bottom portion are not detachable. The top portion includes a drinking spout having a one-way valve, wherein the one-way valve opens to expel fluid from the bottom portion through the spout when a negative pressure is applied to the spout and the one-way valve closes to substantially prevent fluid from leaking out from the bottom portion through the spout when negative pressure is not applied to the spout.

In a specific aspect, the liquid is filled through a top portion of the bottom portion. In another aspect, a safety seal is placed over the spout so that when the spout is moved to an open position the safety seal is broken or removed. In yet another aspect, the bottom portion is formed with metered lines for indicating the quantity of fluid consumed or remaining in

the bottom portion. In a further aspect, a shrink wrap is formed over at least the bottom portion, wherein the shrink wrap is formed with metered lines for indicating the quantity of fluid consumed or remaining in the bottom portion.

These and other features and advantages of the present invention will be presented in
5 more detail in the following specification of the invention and the accompanying figures which illustrate by way of example the principles of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a diagrammatic side view of a toddler cup in accordance with one embodiment of the present invention.

Figure 2 is a diagrammatic perspective view of the top portion of the toddler cup of
5 Figure 1 in accordance with one embodiment of the present invention.

Figure 3A is a diagrammatic side cutaway view of the top portion of the toddler cup of Figure 1 with the spout in the open position in accordance with one embodiment of the present invention.

Figure 3B is a diagrammatic side cutaway view of an alternative embodiment of the
10 top portion of the toddler cup of Figure 1 with the spout in the open position.

Figure 4 is a diagrammatic side cutaway view of the top portion of the toddler cup of Figure 1 with the spout in the closed position in accordance with one embodiment of the present invention.

Figure 5 is a diagrammatic top view of the top portion of the toddler cup of Figure 1
15 with the spout in the closed position in accordance with one embodiment of the present invention.

Figure 6 is a diagrammatic side cutaway view of the top portion and the bottom portion of the toddler cup of Figure 1 with the spout in the open position so that a seal is punctured in accordance with one embodiment of the present invention.

Figure 7 is a diagrammatic side view of a toddler cup having metered lines in accordance with one embodiment of the present invention.

DETAILED DESCRIPTION OF SPECIFIC EMBODIMENTS

Reference will now be made in detail to a specific embodiment of the invention. An example of this embodiment is illustrated in the accompanying drawings. While the invention will be described in conjunction with this specific embodiment, it will be understood that it is not intended to limit the invention to one embodiment. On the contrary, it is intended to cover alternatives, modifications, and equivalents as may be included within the spirit and scope of the invention as defined by the appended claims. In the following description, numerous specific details are set forth in order to provide a thorough understanding of the present invention. The present invention may be practiced without some or all of these specific details. In other instances, well known process operations have not been described in detail in order not to unnecessarily obscure the present invention.

Figure 1 is a diagrammatic side view of a toddler cup 100 in accordance with one embodiment of the present invention. As shown, the toddler cup 100 includes a bottom portion 102 and a top portion 104. The top portion 104 includes a spout 110 having one or more holes 112 from which a toddler may suck liquid 114 from the toddler cup 100. The spout is also substantially leak-proof, and also is preferably sealed when the toddler cup 100 is first purchased. Several embodiments of a top portion are described in more detail below.

The bottom portion 102 is pre-filled with any suitable consumable liquid 114, such as milk, juice, water, medicine such as fluids to replenish electrolytes and water, etc. The top and bottom portions are fixably coupled together so that they cannot break apart and cause the liquid 114 to escape. For example, if a child were to throw the toddler cup 100, it would not break apart like conventional two-piece toddler cups tend to do.

The bottom portion 102 also may include a base 106 for placement of the toddler cup 100 on a flat surface. Preferably, the base is flared (not shown) so that the toddler cup 100 is not easily tipped over. Additionally, the bottom portion can be sized to fit in a standard automobile cup holder.

5 In one implementation, the bottom portion has a curved shape so as to facilitate gripping by a young child. In the illustrated embodiment, the toddler cup 100 has an hour-glass shape. The bottom portion 102 includes at least a first sidewall which has a larger circumference than a second sidewall so the toddler cup 100 cannot easily slip out of a child's hand. As shown, the bottom portion 102 includes two larger sidewall portions
10 having circumferences 118 and 108. These two larger circumferences are larger than a smaller sidewall portion having circumference 116.

 The smaller sidewall 116 may have any suitable circumference for fitting to a young child's hand size. The smaller sidewall may also be used to attach a "leash" to the toddler cup 100 which is then attached to a fixed object, such as a car seat or the child. In one
15 embodiment, the smaller sidewall is sized so that a child who is between the ages of about 6 months and about 4 years old can wrap one or both of his/her hands around the smaller sidewall circumference. In another embodiment, the smaller sidewall is sized so that a child who is between about 6 months and 1 year old can wrap both of his/her hands around the smaller sidewall circumference. In another embodiment, the smaller sidewall is sized so that
20 a child who is about 2 or 3 years old can wrap one of his/her hands around the smaller sidewall circumference. The bottom portion 102 may also include multiple smaller sidewall portions for different sized hands. In one implementation, the bottom portion includes three smaller sidewall portions for a child of about 2~3 years old, a child about 6 month to 1 year

old, and an adult. Any combination of sizes may be used for the smaller circumference and depends on the particular end-user.

Figure 2 is a diagrammatic perspective view of the top portion 104 of the toddler cup of Figure 1 in accordance with one embodiment of the present invention. As shown, the top portion includes a spout 110 having a first hole 112a and a second hole 112b. Although a particular shaped spout is illustrated, the spout may be formed into any suitable shape for consuming liquids from the toddler cup 100. Additionally, although two holes 112 are shown in the spout 110, any number and type of holes may be used to expel liquid from the toddler cup 100.

Figure 3A is a diagrammatic side cutaway view of the top portion 104 of the toddler cup of Figure 1 with the spout in the open position in accordance with one embodiment of the present invention. The top portion 104 may include any suitable mechanism for facilitating consumption of the liquid, while preventing leaks from occurring when the child is not sucking from the toddler cup 100. In this example, the top portion includes a cavity 354 coupled to a first one-way valve 352c. This first one-way valve 352c is also coupled with a cavity 356 contained within the bottom portion 102 of the cup. Thus, one may evacuate fluid contained in the bottom portion cavity 356 through the first one-way valve 352c and spout cavity 354. The top portion 104 of the cup may also include a second one-way valve 352a coupled to a second air hole 353 in the top to allow the fluid to be evacuated more easily. Of course, the top portion may only include a single one-way valve. In this illustration, the first one-way valve 352c may be coupled to the second valve 352a through a central member 352b.

In an alternative top portion 104' embodiment illustrated in Figure 3B, a short straw 302 runs through the spout 110 of the top portion. The straw 302 may also extend a short ways into the bottom portion, but is preferably sized so as to facilitate a child drinking from a *tilted* toddler cup 100. The straw has a top portion 302a which extends to the hole(s) in the spout 110 and a bottom portion 302b which extends at least partly through the spout 110. The straw 302 also includes at a one-way valve 304 for preventing liquid from escaping from the top straw portion 302a.

In either embodiment, the single valve or pair of valves (*e.g.*, 352a and 352c) and connecting member (*e.g.*, 352b) are formed from a flexible and nontoxic material, such as PVC (Polyvinyl Chloride). The valve generally opens when a negative pressure is applied to the spout 110, *e.g.*, when a child sucks on the spout. In contrast, the valve remains closed when a negative pressure is *not* applied to the spout 110, *e.g.*, when a child is not sucking on the spout.

The spout is preferably closed when purchased and sealed with a safety seal to prevent tampering. Figure 4 is a diagrammatic side cutaway view of the top portion of the toddler cup of Figure 1 with the spout 110 in the closed position in accordance with one embodiment of the present invention. Figure 5 is a diagrammatic top view of the top portion of the toddler cup of Figure 1 with the spout 110 also in the closed position in accordance with one embodiment of the present invention. As shown, the spout 110 is nestled in a recess portion 502 of the top portion 104. When the spout 110 is closed, the spout is also covered with a safety seal 506 which can cover almost the entire top portion 104 or the entire toddler cup 100. Alternatively, the safety seal merely covers the spout 110 or the spout and any suitable portion the toddler cup 100.

As shown, the safety seal 506 covers the top portion 104 except for a small finger area 504 of the recess 502. This small finger area 504 allows one to grab the spout tip and pull it open. When the spout 110 is pulled open, a portion of the safety seal breaks apart, as shown by dotted line 508 to thereby allow movement of the spout to the open position. Accordingly, when this seal is broken prior to purchase, one may know that someone else has previously opened the container. Likewise, when this seal is not broken, one may be reasonably reassured that one has likely not tampered with the toddler cup 100.

The safety seal may be formed from a shrink-wrap material which encloses the entire toddler cup 100, except for maybe the finger portion which allows one to open the spout. By way of example, the safety seal is formed from a thermoplastic film material, such as a Mylar material. The shrink-wrap may be attached to a portion (*e.g.*, the dotted line portion 508) which covers the spout via small plastic beads or parts. The spout may also be formed from a material which results in stress marks when moved or opened. Thus, when stress marks are present on the spout, tampering may be assumed. Likewise, when stress marks are not present, one has probably not tampered with the toddler cup 100. Of course, the spout material may be designed to contain stress marks when closed and no stress marks when opened.

The consumable liquid is also preferably sealed from exposure through the spout hole(s) prior to purchase. This may be accomplished in any number of ways. Figure 6 is a diagrammatic side cutaway view of the top portion and the bottom portion of the toddler cup of Figure 1 in accordance with one embodiment of the present invention. As shown, the straw 302 within the spout has a sharp end portion 402. When the spout 110 is moved to the open position, this sharp straw portion 402 punctures a seal 404 within the bottom portion

which previously served as a barrier between the straw/spout hole 302a and the liquid. This seal 404 may be formed from any suitable material, such as an aluminum adhesive tape, etc.

The toddler cup 100 may also include metered lines for monitoring consumption of a particular liquid by the child. Figure 7 is a diagrammatic side view of a toddler cup having
5 metered lines in accordance with one embodiment of the present invention. As shown, the metered lines measure the amount of remaining liquid in ounces, although any suitable measurement system may be utilized. A metric system may be used, for example, European customers. In an alternative embodiment, the metered lines measure the amount of liquid consumed, as opposed to the amount remaining. In the illustrated example, the remaining
10 liquid is metered up to 8 oz. although the particular meter range depends on the size of the toddler cup 100, which may widely vary. Typical sizes include 8 oz, 7 oz, and 4 oz.

The metered lines may be formed in the bottom portion material itself or provided on a shrink-wrap which encloses the toddler cup 100, except for a safety seal portion as described above. In this implementation, the shrink-wrap may contain perforations between
15 the top and bottom portions of the toddler cup 100 so that the shrink wrap on the top portion may be removed as a safety seal mechanism when opening the spout.

Any technique may be used to manufacture the toddler cup 100 so that the top and bottom portions are fixable coupled and the toddler cup 100 is pre-filled with a consumable liquid. In one implementation, the bottom portion 102 is formed in any suitable manner,
20 such as a blow molding method. The bottom portion can then be filled with a liquid. In one embodiment, the bottom portion contains an opening at the top through which the liquid is poured. The top portion is then formed from any suitable technique, such as injection molding.

The top and bottom portions are then fixable attached together. In one implementation, the bottom portion contains a one-way threaded male end around the top opening and the top portion contains a threaded female portion which screws onto the bottom portion's thread. The top may then be fixably screwed onto the bottom portion.

5 Alternatively, the bottom portion may be screwed onto the top portion. In yet another embodiment, the top and bottom portions are heat sealed together.

Although the foregoing invention has been described in some detail for purposes of clarity of understanding, it will be apparent that certain changes and modifications may be practiced within the scope of the appended claims. Therefore, the described embodiments
10 should be taken as illustrative and not restrictive, and the invention should not be limited to the details given herein but should be defined by the following claims and their full scope of equivalents.